Amendments to the Specification:

Please amend the specification as follows:

Please replace the paragraph bridging pages 13 and 14 with the following paragraph:

-- The construction in which <1> the inner diameter of the cylinder is equal to or not greater than approximately 20 mm in the piston pump that reciprocates inside the cylinder having the cylinder head and conducts pressurization may be a construction in which the inner diameter of the cylinder used as a main component of the piston pump is equal to or not greater than approximately 20 mm. More preferably, the cylinder inner diameter of a pump for a wrist blood pressure monitor is equal to or not greater than approximately 8.5 mm and the cylinder inner diameter of an upper arm blood pressure monitor is equal to or not greater than approximately 18 mm. Here, the cylinder head may represent a member (inclusive of component) at the cylinder top portion and may include a member (inclusive of component) directly bonded to the member of the cylinder top portion. The size of the piston pump according to the present invention can be made compact due to its structure and its component structure. The construction in which <2> the discharge throughput of the piston pump is equal to or not greater than approximately 6.0 liters/min may represent that the discharge throughput when the pump is operated under a non-loaded condition is equal to or not greater than approximately 6.0 liters/min. More preferably, the discharge throughput of the piston pump is equal

to or not greater than approximately 1.0 liter/min in the case of a wrist type pump and is equal to or not greater than approximately 5.5 liters in an upper arm type pump. The construction in which <3> pressurization characteristics can be maintained even by reciprocating motion of the piston of approximately 10,000 times may represent that predetermined performance of the piston pump such as a maximum ultimate pressure and/or a pressure ultimate speed can be maintained even when the piston is reciprocated approximately 10,000 times. More preferably, the pressurization characteristics can be maintained even by the reciprocating motion of the piston of at least approximately 30,000 times. The construction in which <4> the cylinder and the cylinder head are non-mechanically coupled may represent that the cylinder head formed by bonding the valve plate and the manifold constituting ~~the cylinder and~~ the end face of the top portion of the cylinder and the cylinder are coupled by a non-mechanical method such as ~~bonding~~ adhesion, welding (metal), welding (plastic), ~~deposition,~~ and the like. Bonding is particularly preferably made by welding (metal) and/or welding (plastic) ~~deposition.~~ The cylinder and the cylinder head may well be bonded by welding (metal) and/or welding (plastic) ~~deposition~~ without using screws or fitting using springs. According to such a construction, seal performance can be easily secured and the pump can be rendered compact. For, when mechanical bonding members such as the screws are used, it is necessary in some cases not only to bore screw holes or to secure spaces for screw threads but also to use screws capable of securing air-tightness.--

Please replace the paragraph bridging pages 14 and 16 with the following paragraph:

-- The piston pump pre-assembly may include the cylinder and the cylinder top portion in which the exhaust port is formed, and may be a semi-finished product of the piston pump containing those components which are necessary for conducting a leakage inspection of the piston pump. The step of forming this piston pump pre-assembly does not require assembly using screws and springs. In other words, the production of the piston pump pre-assembly may be carried out by conducting combination inclusive of butting of components and assembling and conducting non-mechanical bonding such as ~~bonding~~ adhesion, ~~bonding~~ adhesion, welding (metal), welding (plastic) ~~deposition,~~ and so forth. The leakage inspection of the piston pump pre-assembly is necessary for the piston pump but need not always be made for the finished product of the piston pump. The production of the piston pump by further assembling components to the piston pump pre-assembly may mean that those components which are once removed from the piston pump pre-assembly in the subsequent step of finishing the piston pump need not be assembled again.--

Please replace the paragraph bridging pages 19 and 20 with the following paragraph:

--Fig. 1 is a sectional view of a piston pump 10 according to an embodiment of the present invention. The piston pump 10 of this embodiment mainly comprises a housing for accommodating a motor 42, constituted by a housing substrate material 44 and a cover 47, a piston 14 driven by the motor 42, a cylinder 12 into which the piston 14 is inserted and a valve plate 16 forming a cylinder top portion,

and a manifold 30 welded ~~deposited~~ to the valve plate 16. The motor 42 positioned at a lower left position in the drawing is supported by the cover 47 in such a manner as to strike the lower part of the housing substrate material 44. A degree of freedom of the motor 42 in a transverse direction in the drawing is restricted by an upward protuberance 49 formed at a substantial center of the cover 47 and the degree of its freedom in a rotating direction is restricted as the motor 42 is sandwiched between the housing substrate material 44 and the cover 47. The cover 47 is connected by a side member 45 playing the role of a hinge in such a manner as to hang down from the housing substrate material 44. The cover 47 closes the housing by sandwiching the motor 42 with the housing substrate material 44 as described above and fixes the motor 42 inside the housing. At this time, a protuberance 43 on the right side of a protuberance portion extending upward at the extreme right of the cover in the drawing engages with an opening 51 formed at a lower part of a side member 46 existing at a position opposing the side member 45 to prevent the cover 47 from falling down in the drawing and to keep it under the closed state. The cylinder 12 is positioned on the right side in the drawing, is coupled and fixed with the housing (particularly, the housing substrate material 44) and extends vertically in the drawing. The piston 14 is inserted into the cylinder 12 and reciprocates in an axial direction that is the vertical direction in the drawing. The valve plate 16 is bonded to ~~coupled with~~ and arranged on the cylinder 12 in the drawing by welding ~~depositing a deposition~~ welding portion 15 so as to keep gas-tightness and forms the top portion of the cylinder 12. The valve plate 16 has the manifold 30 that is welded ~~deposited~~ to a ~~deposition~~ welding portion 17 at the upper part in the drawing. A space 31 defined by the manifold 30 and the valve plate 16 is a chamber for air

exhausted and the ~~deposition~~ welding portion 17 is welded ~~deposited~~ in such a manner as to keep air-tightness of this chamber. In other words, the space 31 functioning as a top plenum is defined by the valve plate 16 and the manifold 30 that together function as a top enclosure. An air outlet (discharge port 32) of the chamber constituted by the space 31 is disposed on the left side of the manifold 30 in the drawing.--

Please replace the paragraph bridging pages 22 and 23 with the following paragraph:

In the embodiment, the portions that frequently slide are a set of the crank shaft 38 and the connecting ring 36 and a set of the piston 14 and the cylinder 12. To satisfy their sliding characteristics, an organic material such as a synthetic resin is preferably used and its surface coarseness is as small as possible and is preferably a mirror surface or approximate to the mirror surface. More concretely, the crank shaft 38, the connecting ring 36 and the piston 14 of this embodiment use "Lubmer" (registered trade mark) of Mitsui Petrochemical Co., Ltd. This Lubmer is a specific polyolefin resin having high sliding characteristics. It is also possible to use ultra-high molecular weight polyethylene (for example, "Hizex Million", a product of Mitsui Petrochemical Co., Ltd), polyacetal and nylon (6, 66) as the sliding member besides the specific polyolefin resin described above. In this embodiment, the cylinder 12, the valve plate 16 and the manifold 30 that are integral with the housing are formed of a polymer material comprising "Stylac" (registered trade

mark) of Asahi Kasei K. K. These components are made of the same ABS in view of their weldability ~~fusibility~~ The valve uses an ordinary NBR rubber.--

Please replace the first full paragraph on page 23 with the following paragraph:

--Each bonding member shown in the drawings is bonded by the ultrasonic welding ~~deposition~~ at ~~a respective deposition~~ each welding portion.--

Please replace the paragraph bridging pages 23 and 24 with the following paragraph:

-- Fig. 2 is a partial sectional view of the piston pump of the embodiment when a part of the components viewed from the right side of Fig. 1 is removed. The uppermost rectangular component is the manifold 30. The manifold 30 and the valve plate 16 below the former are bonded to each other by ultrasonic welding ~~deposition~~ capable of keeping air-tightness in the same way as bonding between the cylinder 12 integrated with the housing below the valve plate 16 and the valve plate 16. The piston 14 inserted into the cylinder 12 has the suction port 28 and the suction valve 26 (see Fig. 1). The spherical seat 37 exists in the recess portion formed in the inner peripheral surface of the piston 14 below the piston 14 (see Fig. 4). The spherical seat 37 is finished into the annular spherical shape so that it mates with the convex outer circumference of the coupling ring 34 that is brought into contact with the spherical seat 37. The coupling ring 34 is press-fitted into this recess. The

convex of the coupling ring 34 and the upper and lower tilt portions of the recess in which the coupling ring 34 exists and the coupling ring 34 move up and down the piston 14 without falling off from this recess. The position of the driving shaft of the motor 42 does not change with respect to the housing in the drawing. Therefore, the connecting ring 36 moves up and down and to the right and left in the drawing with respect to the housing when the motor 42 rotates. When moving up and down, the connecting ring 36 simultaneously moves up and down the piston 14. When the connecting ring 36 moves to the right and left, however, the connecting ring 36 undergoes deformation at the joint portion with the coupling ring 34 because the cylinder 12 restricts the movement of the connecting ring 36. It is therefore possible to absorb this motion, or to absorb this motion with the coupling ring 34 due to the slip in the spherical seat 7. Because the coupling ring 34 has freedom to a certain extent in its circumferential direction, it can absorb the movement of the driving shaft 40 of the motor 42. Therefore, the piston pump can flexibly cope with unexpected movement and deformation of the piston 14 and the crank shaft 38 because freedom for absorbing the movement is secured in various directions.--

Please replace the paragraph bridging pages 24 and 25 with the following paragraph:

--Fig. 2 is a partial sectional view of the piston pump of the embodiment when a part of the components viewed from the right side of Fig. 1 is removed. The uppermost rectangular component is the manifold 30. The manifold 30 and the valve plate 16 below the former are bonded to each

other by ultrasonic welding ~~deposition~~ capable of keeping air-tightness in the same way as bonding between the cylinder 12 integrated with the housing below the valve plate 16 and the valve plate 16. The piston 14 inserted into the cylinder 12 has the suction port 28 and the suction valve 26 (see Fig. 1). The spherical seat 37 exists in the recess portion formed in the inner peripheral surface of the piston 14 below the piston 14 (see Fig. 4). The spherical seat 37 is finished into the annular spherical shape so that it mates with the convex outer circumference of the coupling ring 34 that is brought into contact with the spherical seat 37. The coupling ring 34 is press-fitted into this recess. The convex of the coupling ring 34 and the upper and lower tilt portions of the recess in which the coupling ring 34 exists and the coupling ring 34 move up and down the piston 14 without falling off from this recess. The position of the driving shaft of the motor 42 does not change with respect to the housing in the drawing. Therefore, the connecting ring 36 moves up and down and to the right and left in the drawing with respect to the housing when the motor 42 rotates. When moving up and down, the connecting ring 36 simultaneously moves up and down the piston 14. When the connecting ring 36 moves to the right and left, however, the connecting ring 36 undergoes deformation at the joint portion with the coupling ring 34 because the cylinder 12 restricts the movement of the connecting ring 36. It is therefore possible to absorb this motion, or to absorb this motion with the coupling ring 34 due to the slip in the spherical seat 7. Because the coupling ring 34 has freedom to a certain extent in its circumferential direction, it can absorb the movement of the driving shaft 40 of the motor 42. Therefore, the piston pump can flexibly cope with unexpected

movement and deformation of the piston 14 and the crank shaft 38 because freedom for absorbing the movement is secured in various directions.--

Please replace the paragraph bridging pages 28 and 29 with the following paragraph:

-- Fig. 17 shows the pump pre-assembly 11 as the inspection object shown in Fig. 16. The inspection object mentioned hereby includes the valve plate 16 and the exhaust valve 18 welded ~~deposited~~ to the top of the cylinder 12 and the manifold 30 welded ~~deposited~~ to the valve plate 16 in the piston pump of the embodiment described above exclusive of the piston and its accessorial components and the motor and its accessorial components. Air-tightness of the space 31 defined by the valve plate 16 and the manifold 30 or the air chamber is the inspection object in the inspection and the piston, etc, need not be inspected. To carry out the inspection, the valve 66 is first opened and the pressure inside the tank is set to approximately 300 mmHg by the external pump 68 (see Fig. 16). At this time, the pump pre-assembly 11 as the inspection object may be connected so that it is not affected by the pressurization step by disposing still another valve at an intermediate part of the pipe 62. When a predetermined pressure is reached by the external pump 68, the valve 66 is closed, the start switch 54 is turned ON and the inspection is started. When the absence of leakage to a certain extent is confirmed after the passage of approximately 15 seconds, the green lamp 56 is lit and when the leakage is great, the red lamp 58 is lit. As described above, in the piston pump according to this embodiment, the inspection can be made under the state of the piston pump pre-

assembly, and defective products can be rejected at an early stage and productivity can be improved.-

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Please replace the paragraph bridging pages 29 and 30 with the following paragraph:

-- Fig. 19 illustrates a production process of the piston pump according to this embodiment. First, a valve that is to become the exhaust valve 18 is fitted into the hole 24 of the valve plate 16 to fabricate a valve plate assembly (S-01). Next, the cylinder 12, the valve plate assembly and the manifold 30 are bonded by ultrasonic welded ~~deposited~~ to fabricate the piston pump pre-assembly (S-02). The leakage inspection described above is carried out for this piston pump pre-assembly as the inspection object (S-03). Those inspection objects which are approved in the inspection are sent to the next step and those rejected are repaired or discarded. The piston assembly is fabricated in parallel with the steps described above. First, the valve that is to become the suction valve 26 is fitted into the hole 29 of the piston 14 to fabricate the piston equipped with the valve (S-11). Next, the coupling ring 34 having the connecting ring 36 coupled thereto is press-fitted (inserted) into the piston with the valve to fabricate the piston assembly (S-12). The crank shaft 38 is press-fitted to the driving shaft 40 of the motor 42 in parallel with the production step described above and the motor equipped with the shaft is produced (S-21). The crank shaft of the motor equipped with the shaft is inserted into the connecting ring of the piston assembly described above and a piston-cam-motor provisional assembly is produced (S-13). The piston of the piston-cam-motor provisional assembly is inserted into the cylinder of the piston pump pre-assembly described above and at the same time, the

motor is fitted to the housing (S-04). The cover 47 of the housing is closed and the projection 43 is meshed with the opening 51 to complete the piston pump of this embodiment (S-05). As described above, the piston pump according to this embodiment can be produced with a drastically smaller number of production steps while the gas leakage test is inserted into the production steps.--

Please replace the second full paragraph on page 32 with the following paragraph:

-- Fig. 24 illustrates the state where the motor 42 is accommodated half inside the motor housing. The driving shaft 40 of the motor 42 is pressed into the crank shaft 38 and the crank shaft 38 is inserted into the ring opening portion 36c as the inside space of the connecting ring 36. The coupling ring 34 coupling with the connecting ring 36 engages with the spherical seat 37 of the piston 14 (see Fig. 2). When the cover 47 is pushed in from this state, the pump assembly can be easily fabricated. The valve plate is hereby omitted for simplification but such an assembly can be assembled after the valve plate is bonded by ultrasonic welded ~~deposited~~ in practice.--

Please replace the first full paragraph on page 33 with the following paragraph:

-- Fig. 26 is a sketch showing the piston pump 10''' under the state in which the cover 47 shown in Fig. 24 is fitted. The valve plate 16 is welded ~~deposited~~ to the top of the cylinder 12 and the

manifold 30 having the discharge port 32 is further welded ~~deposited~~. The direction of the discharge port 32 faces right in the drawing like a beak of a duck moving forth on a water surface contrary to the case of Fig. 1.--